California Environmental Protection Agency AIR RESOURCES BOARD	Cummins Inc.	EXECUTIVE ORDER U-R-002-0132 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2002	2CEXL0359ABA	5.9	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler	Crane, Loader, Tractor, Dozer, Pump, Compressor

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ KW < 130	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
130 ≤ KW < 225	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	0.4	6.9	--	0.8	0.18	6	1	22

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 6th day of December 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Model S mary Form

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U-E-002-0132

Manufacturer: Cummins Inc.

Engine category: Nonroad Over 50 Hp

EPA Engine Family: 2CEXL0359ABA

Mfr Family Name: A403

Process Code: New Submission

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
1889;FR90001	B5.9-C	200@2500	91	77.1	593@1500	112	56.8	DOT, TC, CAC
1889;FR90548	B5.9-C	200@2500	91	77.1	593@1500	112	56.8	TC, CAC
1889;FR9898	B5.9-C	185@2500	85	71.9	550@1500	104	52.5	TC, CAC
1889;FR90269	B5.9-C	185@2400	91	73.4	545@1500	109	55.0	TC, CAC
2063;FR90340	B5.9-C	185@2400	90	72.6	558@1500	109	55.0	TC, CAC
2063;FR90167	B5.9-C	185@2300	92	71.5	580@1500	111	56.3	TC, CAC
2063;FR9897	B5.9-C	185@2200	93	69.0	580@1500	111	56.3	TC, CAC
2063;FR90539	B5.9-C	185@2200	93	69.0	580@1500	111	56.3	TC, CAC
2063;FR90287	B5.9-C	185@2200	93	69.0	580@1500	110	55.6	TC, CAC
2063;FR90549	B5.9-C	185@2100	96	67.7	567@1500	110	55.8	TC, CAC
2063;FR90081	B5.9-C	174@2200	88	65.1	590@1500	112	56.8	TC, CAC
2479;FR90378	B5.9-C	174@2200	87	64.7	590@1500	112	56.8	TC, CAC
2479;FR90504	B5.9-C	174@2200	87	64.7	590@1500	112	56.8	TC, CAC
2479;FR91090	B5.9-C	173@2200	87	64.7	590@1500	112	56.8	TC, CAC
2479;FR91094	B5.9-C	173@2200	87	64.7	590@1500	112	56.8	TC, CAC
2072;FR90080	B5.9-C	174@2500	78	65.8	458@1500	88	43.7	TC, CAC
2072;FR91092	B5.9-C	173@2500	78	65.8	458@1500	88	43.7	TC, CAC
1961;FR90016	B5.9-C	174@2500	78	65.8	458@1500	88	44.3	TC, CAC
1961;FR91093	B5.9-C	173@2500	78	65.8	458@1500	88	43.3	TC, CAC
2417;FR90375	B5.9-C	174@2500	80	67.1	480@1500	91	46.0	TC, CAC
2417;FR91091	B5.9-C	173@2500	80	67.1	480@1500	91	46.0	TC, CAC
1962;FR90017	B5.9-C	170@2300	84	65.0	490@1500	95	48.0	TC, CAC
1962;FR90313	B5.9-C	170@2200	85	63.0	476@1500	90	45.7	TC, CAC
1962;FR90338	B5.9-C	168@2200	84	62.0	541@1500	101	51.0	TC, CAC
1962;FR90019	B5.9-C	166@2075	85	59.4	463@1500	89	45.0	TC, CAC
1962;FR90018	B5.9-C	165@2200	81	60.4	512@1500	97	48.9	TC, CAC
1962;FR90337	B5.9-C	153@2200	74	55.0	493@1500	96	48.5	TC, CAC

1962;FR900	B5.9-C	150@2200	75		466@1500	89	45.1	DD-	C, CAC
1962;FR90812	B5.9-C	150@2200	74	54.9	483@1500	93	47.0		TC, CAC
2292;FR90143	B5.9-C	169@2100	89	63.1	476@1500	94	47.4		TC, CAC
2292;FR90142	B5.9-C	167@2000	90	60.7	480@1500	94	47.7		TC, CAC
2292;FR90321	B5.9-C	160@1900	87	55.8	479@1500	93	47.0		TC, CAC
2292;FR90763	B5.9-C	160@1900	87	55.8	479@1500	93	47.0		TC, CAC
2147;FR90444	B5.9-C	171@2200	84	62.4	469@1400	99	43.8		TC, CAC
2658;FR90629	B5.9-C	160 @ 2350	76	59.9	456 @ 1600	88	47.5		TC, CAC
2868;FR90738	B5.9-C	169@2100	91	64.6	505@1200	97	39.2		TC, CAC
8028;FR91089	B5.9-C	173@2200	88	65.1	590@1500	112	56.8		TC, CAC
8028;FR90814	B5.9-C	165@2000	88	59.2	555@1500	108	54.5		TC, CAC